

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: Dave.Ackrill@WESTWOOD45.powergen.co.uk  
Subject: [10165] 73kHz Licence Applications  
Message-ID: <960622075134Z\*/G=Dave/S=Ackrill/O=WESTWOOD45/PRMD=POWERGEN/  
ADMD=CWMAIL/C=GB/@MHS>

Hi all,

If anyone is interested in a listing of all of the applications for the new LF allocation in the UK, I can send them a copy. I won't take up the space on the listing to everyone as it's 127 line long!

For those who may not have heard, the new allocation is 71.6 to 74.4 kHz and is available to UK "A" license holders (there are 4 classes of licence available in the UK - A = all HF/VHF/UHF bands, B = Full VHF/UHF bands, Novice A = Some HF and VHF/UHF bands QRP and Novice B = some VHF/UHF bands QRP)

Although the power limit of 1W ERP, and the fact that most antennas will have an efficiency of less than 1%, means that it will be possible to run more than 5W RF CW or 10W SSB, I guess that many will be using low power home-brew gear. So it would seem as if this might be an ideal QRP experimenters band.

I'd be interested to hear from anyone active on LF anywhere else, I understand that some other countries have allocations around 160kHz. I've found the "Longwave" web page and that seems an interesting source of news etc., but does anyone know of any other please?

Cheers de Dave (G0DJJA)

RSGB Propagation Studies Committee Member and G-QRP Club Member  
No. 3247

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: n5zgt@swcp.com (Brian Milesosky)  
Subject: [10158] ARRL Field Day Bulletin  
Message-ID: <199606220403.WAA08451@kitsune.swcp.com>

Hello Everybody,

Just thought this would help "all y'all" out! Happy Field Day!

72,

Brian, N5ZGT

>SB QST @ ARL \$ARLB040  
 >ARLB040 Field Day Bulletin  
 >  
 >ZCZC AG20  
 >QST de W1AW  
 >ARRL Bulletin 40 ARLB040  
 >>From ARRL Headquarters  
 >Newington CT June 21, 1996  
 >To all radio amateurs  
 >  
 >SB QST ARL ARLB040  
 >ARLB040 Field Day Bulletin  
 >  
 >Crew members aboard the current STS-78 shuttle mission are planning  
 >to operate during this year's Field Day. Valid two-way contacts  
 >with the shuttle will count as satellite QSOs for QSO point and  
 >bonus point credit. Contacts with the packet robot do not count.  
 >  
 >As part of the SAREX activities taking place during this mission,  
 >set to launch June 20, NASA Payload Commander Susan Helms, KC7NHZ,  
 >Mission Specialist Charles Brady, N4BQW, and Payload specialist  
 >Robert Thirsk, VA3CSA, hope to find free time to hand out points  
 >from the shuttle to Field Day ops. The crew will use the following  
 >separate receive and transmit frequencies:  
 >  
 >FM voice downlink: 145.55 MHz.  
 >  
 >FM voice uplink: 144.91, 144.93, 144.95, 144.97 and 144.99 MHz.  
 >NNNN  
 >/EX  
 >  
 >  
 >

Boy Scouts of America	Amateur Radio - N5ZGT
JASM -Troop 41	ARRL QRP: NorCal# 1700
Albuquerque, N.M.	Packet: N5ZGT @ KC5IZT.ALBQ.NM.USA.NA
O.A. Lodge 66 <-W-W-W-<<	Internet: n5zgt@swcp.com

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
 From: Philip Karras <ke3fl@access.digex.net>  
 Subject: [10173] Charging Gel Cells, any rating

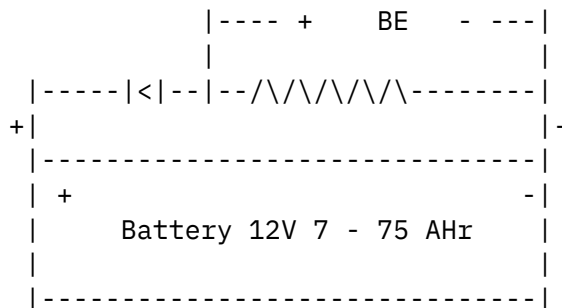
Message-ID: <Pine.SUN.3.94.960622104533.8245A-100000@access4.digex.net>

Luke, To charge a gel cell (12 version) it should go up to 14.4V. At that time it is considered (by the manufacturers) to be fully charged. You may notice that the charge current continues to drop at the voltage increases, but this is a good thing. You don't want to keep forcing 800 ma into your battery when it is fully charged anyway.

Smart chargers measure this stuff & reduce the current so that they keep the battery topped off continually thereafter. If you measure the voltage at this time you will notice it changing from time to time as the unit senses that a bit more current is needed.

Another way to do the same thing is with a resistor/diode accross the battery (so that no current flows) then attach a 12 V battery eliminator (one of which you no doubt have around the house someplace) attach it accross the resistor. In this way the eliminator current is split between the battery and the resistor. Pick the resistor such that its current draw is the same from the eliminator as the battery's when the battery reaches 13.8 Volts. Add the diode and this should be very close to 13.5 to 13.8 volts on the battery.

For 7 AHr Gel cells to 75 AHr gel cells I found that 125 ohm five to ten watt resistors work well with the 300 ma @ 12 V battery eliminators (BE) I sell as chargers. (I use 1N4001 diodes.)



Some experimentation and much patience are needed to find the best resistor to limit full charge current.

This method can be used to fully charge a gel cell. I leave the battery like above for days until it reaches a voltage between 13.5 and 13.8 volts, then place the BE directly on the battery, this way ALL current from the BE goes to the battery. Measure the voltage when you do this and you will notice that the battery voltage climbs to 14.4 volts rather quickly. The battery is fully charged when this happens. Place the BE back into the above configuration for continued battery care, maintenance.

The resistor needed will be different for each BE used since they are all a bit different, even the ones from the same lot like the ones I buy.

I recommend starting with a 100 ohm five or 10 watt resistor and the diode. This should get you close (about 13.0 to 13.3 volts) then add resistance until the battery is fully charged and continue to measure the voltage for a few days to be sure. I have noticed that in this arrangement even adding a volt meter affects the voltage reading when the battery is close to full charge.

Also, this arrangement works for lead acid batterys but the resistance I use is 150 ohms.

Five watt resistors get HOT with the BE's I use so take care not to touch them for too long a time.

Good-luck and I hope this helps. I am not finished with my experiments but this is what I have found out so far.

72 & 73 de KE3FL/Phil

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: "Frank G3YCC" <g3ycc@enterprise.net>  
Subject: [10168] Do you CONSTRUCT?  
Message-ID: <199606221401.0AA10822@mail.enterprise.net>

If you read this, fine you are a homebrewer, constructor and real RADIO AMATEUR. OK, now as you know, I have my own QRP and general Amateur Radio Web Page - you haven't been there yet, well nearly one THOUSAND have! Anyway, I am trying to build up my page of hints and tips. You know, what your Mum and Dad never told you about (radio wise, of course!). So, If you do build gear, then you MUST have some hints to add for me. So, let me know, PLEASE and you will be mentioned on the page for all the grateful visitors to the site.

G QRPers: I hope to start the League Table on July 1st IF there is enough interested - so far three of us! Do please let me know ASAP, otherwise it's a no go.

Have fun.

-----  
73

Frank G3YCC G QRP 042

QRP Web Page: <http://homepages.enterprise.net/g3ycc/>

Packet: G3YCC@GB7HUL.#15.GBR.EU

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: svecbrdk@well.com (Lillian Svec and Wayne Burdick)  
Subject: [10161] Entire Wilderness Staff is at FD -- hold yer phone calls :)  
Message-ID: <199606220531.WAA28234@mh1.well.com>

Bob Dyer (who IS Wilderness Radio) is at the Zuni Loop site, and the design consultant (me) is only going a short distance. Destination is south of San Jose in Henry Coe State Park, with Eric, WA6HHQ. I'm recovering from a digestive bug of some kind, otherwise Eric and I would be Zuni-ing, too. Sorry to miss Rich Arland, Richard Fisher, Doug H., Fred Turpin, and the rest of the gang; hope to see you next year.

73,  
Wayne  
N6KR

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: Dave.Ackrill@WESTWOOD45.powergen.co.uk  
Subject: [10164] Field Day "at Home"  
Message-ID: <960622075123Z\*/G=Dave/S=Ackrill/O=WESTWOOD45/PRMD=POWERGEN/ADMD=CWMAIL/C=GB/@MHS>

Hi everyone,

Over here for field day you have to send in the details of the Field that you intend to use for National Field Day (NFD).

I doubt if I would get far by entering "the back garden behind 104 Durkar Lane" !!

By the way, we have VHF NFD, HF NFD and Low Power NFD events. Is there just one NFD in the US, or do you have others in the year?

For those interested, Low Power Field Day in UK is 14th July. VHF Field Day is 6/7 July.

Cheers de Dave (G0DJA)

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: n5zgt@swcp.com (Brian Mileschosky)  
Subject: [10159] Happy Field Day!  
Message-ID: <199606220403.WAA08447@kitsune.swcp.com>

Hello Everybody,

Have a safe and fun Field Day weekend! Look for NS5G (QR0). I might be on the air QRP, so you can look for N5ZGT.

Don't forget the shuttle (STS-78 which is a SAREX mission), too! Voice QSOs count 100 points.

Best of 73 es 72,

Brian, N5ZGT

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Boy Scouts of America  
JASM -Troop 41  
Albuquerque, N.M.  
O.A. Lodge 66 <-W-W-W-<<

Amateur Radio - N5ZGT  
ARRL QRP: NorCal# 1700  
Packet: N5ZGT @ KC5IZT.ALBQ.NM.USA.NA  
Internet: n5zgt@swcp.com

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From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: DLShips@aol.com  
Subject: [10170] Kite Beacon Test  
Message-ID: <960622095156\_419467751@emout12.mail.aol.com>

Anybody out there ?

I'm test firing my kite beacon on 10124Khz beginning now (09:45) Eastern Daylight Time. It is not dangling from a kite but is on my test bench firing into a 40 meter Vee shaped dipole (poor ant) and is not running full power of 250mw. It is running about 90 Mw at present. It is running from the on-board backup battery since it's not exposed to sunlight.

If the wind is suitable, I'll take it to the beach this afternoon and send it aloft with my big kite.

Anyone hearing it, please follow the instructions in the beacon message.

I'll leave it on for about 2 hours this morning.

It fires a 40 second message and fires about every 2 minutes.

Hope I get some feedback. 72's

Tnx de W3RDF/qrp (kite beacon from the beach)

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: thom.lacosta@fido261.qis.net (Thom LaCosta)  
Subject: [10169] MFJ 'No Ground/No Radial' Antenna  
Message-ID: <065\_9606220930@fido261.qis.net>

Hello All!

Anyone have any experience, pro or con, with the antenna that MFJ advertises as a 'no ground/no radial' vertical.

Having always had bad luck with verticals, which I attribute to bad grounds/not enough radials, I'm intrigued with the concept.

Thom LaCosta  
K3HRN  
thom@fido261.qis.net  
Our Business is Business

--

|Fidonet: Thom LaCosta 1:261/1352  
|Internet: thom.lacosta@fido261.qis.net  
|Standard disclaimer: Take a Naugha to Lunch today YOU pay the bill!

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: Jeffrey Hetherington <jhetheri@freenet.npiec.on.ca>  
Subject: [10160] Sable & 30m  
Message-ID: <Pine.SGI.3.93.960622002633.29825A-1000000@freenet.npiec.on.ca>

Sorry if this is old news, but the guys in the TMPS can look for CY0AA from Sable Island on 30m starting June 25.

73/72

Jeff

=====  
L. Jeffrey Hetherington - VA3JFF  
Niagara Falls, Ontario, Canada

Canadian QRP Award - <http://www.geocities.com/Colosseum/2572/QRP.html>  
VA3JFF TMS 1996 Qs=019 States=15 Confirmed=05 DX=01  
CO CA NY IN SD WI TN GA IL TX DC OH NC SC LA (0Z7)

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: Fred Chen <fred@asl3.asl-labs.bc.ca>  
Subject: [10162] subscribe  
Message-ID: <Pine.D-G.3.91.960621223809.4171A-100000@asl3>

-----  
Fred Chen, Lab Supervisor           e-mail:           fred@asl-labs.bc.ca  
ASL Laboratories Ltd.           Telephone:       +604-253-4188  
Vancouver, BC CANADA           Amateur Radio Callsign: VE7LNX  
      "Specialists in Environmental Chemistry"  
-----<http://www.asl-labs.bc.ca/>-----  
      "The race for quality has no finish line."

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: JCoote@aol.com  
Subject: [10176] Unusual Vertical  
Message-ID: <960622204517\_222985239@emout18.mail.aol.com>

Here's an unusual vertical antenna which I believe had a little gain on the higher HF bands, some low-angle performance... and wideband coverage of 3-30 MHz.

I designed my antenna for  $5/8\lambda$  on the highest band I would be using which was 10 meters. My antenna height was approximately 20 feet. If the mast is taller than  $5/8\lambda$  on the highest band you will use, the antenna will lose it's low-angle performance and gain since the lobes from a longer-than- $5/8\lambda$  antenna will be at high angles.

If you wanted, you could make your mast  $5/8\lambda$  long at a lower frequency... Example: if 14 MHz were the highest frequency you would use with this vertical, then you would make it  $5/8\lambda$  long (about 40 or 41 feet) on 14 MHz.

This antenna is most effective on bands where the length is between  $1/8\lambda$  to  $5/8\lambda$ . Below  $1/4\lambda$  or  $1/8\lambda$ , efficiency falls off... above  $5/8\lambda$  the lobes are all over the place. My 20 foot antenna was most effective from 11 to 29 MHz, but still worked very nicely on 4, 7 and 10 MHz. Similarly, a 41 foot



version would work best from 5.7 to 14 Mhz, but would go lower in frequency with good results.

My 20 foot antenna was roof mounted over a counterpoise of ten radials laying on the roof and radiating from the mast like the spokes in a wheel. Quantity of radials is more important than old hat about using two resonant radials per band.

The antenna was made from non-seamed telescoping aluminum tubing and hose clamps with a thick rectangular block of plastic at the base as insulator and mount. U-bolts and hardware allowed mounting of the insulator to a pipe on the roof, or to the top of a TV mast.

Matching... I was getting to that.

I used an Icom AH-2 automatic antenna tuner right at the base of the antenna.

Other military, marine or aviation type automatic antenna couplers will work, but they must be right at the base of the antenna... no coax or feedlines between the antenna and tuner, just a very short lead! "Coax only" tuners may not work, even when connected right to the base of this antenna, these often don't have enough L/C in them to match even a dummy load.

I tried a field version of this antenna as well. I put my 20 foot antenna on top of a 20 foot TV Push-up mast. I bolted the tuner to the top of the 20 foot TV mast, just under the base insulator for the 20 foot antenna. A short lead ran from the tuner to the antenna. I limited the amount of radials to four for this antenna and incorporated the radials into the guying of the TV mast. The radials were isolated from the TV mast with insulators, but connected to the counterpoise terminal of the automatic tuner. The coax and tuner control cables were taped to the 20 foot TV mast. The 20 foot mast may not have been necessary in the field but does elevate the feedpoint while drooping the radials for a lower angle. The added height would be a great help for VHF-like local contacts on 10, 12 or 15 meters.

The antenna was as good as any trapped vertical (I thought) and had wider coverage of HF. There was no problem with 50 or 100 Khz bandwidths, therefore no need to "forcefeed" a long coax run with a tuner in the shack and have -that- loss/radiation/SWR problem... the tuner was at the base of the antenna.

A home-made manual or remote tuner could also be used at the base of this antenna if the antenna were a ground-mounted version, or a few feet above ground. The homemade design could be simplified by bandswitching to presets if full 3-30 MHz coverage were not needed.

73, Jay  
WB6AAM

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: wq8q@juno.com  
Subject: [10175] Verticals, et al  
Message-ID: <19960622.153224.10183.0.wq8q@juno.com>

Yup, Jess, I agree with everything you say . . . and if you'll notice I really liked my R4 and had good dxing with it . . . I wished I'd have stayed with the Cushcrafts and that's why I'm considering the R7000

Like I said about the Gap . . . no real personal experience but have a couple friends who have been less than successful . . . it's what I've heard about the Gap in general . . . some folks have great success with it, and with others it's just marginal. Good to hear you've had good luck with the Gap . . . may look into it.

The one thing I'd forgotten about the MFJ was the "coathanger" radials or stubs, or whatever they called them. I'll swear they were made out of old coathangers, and they were held in place by screws that came loose, and after a good breeze, I'd go out in the morning and find them lying in the yard . . . didn't do much for SWR and you had to be careful to get the right lengths in the right places . . . I really have doubts about a QRP signal pushing its way through the MFJ, as I had trouble with 200 watts at the time.

73 de Rick, WQ8Q

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: weinfu@w8dc.#swmi.mi.usa.noam  
Subject: [10166] Wire Dipoles  
Message-ID: <46605\_WEINFU@w8dc.bbs>

R:960622/1030z @:W8DC.#SWMI.MI.USA.NOAM [GR, MI] #:25184 \$:46605\_weinfu Z:49504

Gang,

The age-old question has arisen and I haven't the answer. (What else is new...?) When constructing a wire dipole with INSULATED #12 wire, I know that it has a velocity factor that makes it resonate lower than an UNINSULATED wire of the same length.

Example: (Using the formula for one leg of a dipole  $234/\text{Freq}=\text{Feet}$ )

An UNinsulated wire 16' 6" is 'sposed to resonate at about 14.18 mhz. However if you cut an INSulated wire 16' 6" it resonates lower because of the insulated covering.

There was an article on this somewhere. Anyone have a clue on the difference in resonance frequency that it makes? Is it significant?

```
*****
*                               Greg Weinfurtner AEE BSS *
*      NN      N  SSSSSSS  8888888  0000000  Electronic Design Splst *
*      N N     N  S        8      8  0      0  Ohio University   Athens *
*      N N     N  SSSSSSS  8888888  0      0  GO BOBCATS!           *
*      N  N N          S    8      8  0      0                               *
*      N      NN  SSSSSSS  8888888  0000000                               *
*                               Can thou send forth lightnings *
*                               Amateur Radio      that they may go and say unto *
*                               thee, 'Here we are'? Job 38:35 *
*      weinfurtner@ouvaxa.cats.ohiou.edu                               *
*      http://ouvaxa.cats.ohiou.edu/~weinfurtner                               *
*****
```

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: NYOUNG@nova.wright.edu  
Subject: [10177] Re: "Phenomenon" on 30 metres  
Message-ID: <01I680UGSHGI8Y6WPY@nova.wright.edu>

About half way through the posting on John Travolta & others using ham radio in the movie "Phenomenon," I suddenly realized that I might be missing something. That's because I was immediately reminded of a comedy bit I'd seen the other night. The comedienne was telling about her first experiences in New York. She's a Georgia native and she was amazed at how ordinary bums and junkies seem to home in on people who are not as street-wise as her version of the common New Yorker.

She told about this junky who was lurching her direction. The guy was holding a Scientology sign. She said something like "And I thought, 'Please, Lord... let him stay with the heroin.'"

The connection between the Scientology sign, the junkie, the comedy bit and the movie "Phenomenon" was easy enough: John Travolta is a Scientologist. So is Chick Corea and a hand-full of other Hollywood types. And here's Travolta, probably OT3 by now, playing in a moview about some guy who gets his full brain potential from a beam of light sent from a space ship. Kinda makes sense, if you follow the Dianetics/

Scientology hokum.

L.Ron Hubbard founded Scientology after making a bet with some other sci-fi writers that he could get rich off a bogus religion scam. Guess he got so used to the money that he started to believe it. Anyway, the Dianetics/Scientology line goes that some evil intergalactic power tripper captured a bunch of super-brain beings known as Thetans in a volcano and sealed the volcano with an atomic device. (Does this begin to link here? This volcano story and the volcano that you see in the adverts for "Dianetics by L.Ron Hubbard" that show up on the tv from time to time?)

So Hubbard made up this spiel that you and I and everyone else on this planet is inhabited by a tortured, captive Thetan just trying to breath free (background of melancholic violin notes). And that each of us can reach our true potential as living beings (and, I guess, as Thetans) by using the question-answer bit involving a galvanic skin response meter available only from the Church of Scientology and only to be used by trained "auditors" to clean up our engrams and return us to the pristine state of intellectual cool (and economic ruin) known only to those who have paid their money to holy mothra crutch.

So there's Travolta, copying RTTY and ASCII and Ron only knows what else while working DX to Diana Ross (ok, maybe it was Dianetics Ross or something). Why it's enough to make me wanna turn on my radio, hoist the tibetan prayer flags up the feed line and let loose with a whole text from one of those (presumably posthumous) sci-fi books that keep popping up with L.Ron Hubbard's name on 'em. Then I'd know for sure that my ethics were in and my gains were validated and all was right with Command, Org & millions of other struggling, captive Thetans around the universe. AND I'd probably bend spoons like Uri Geller and make my antenna flat out levitate to optimum heights.

That is, it would work if I weren't FAIR GAME. You might wanna check that out. It was one of the Command lines from around 1969, one that gave permission to every Scientologist (of whatever OT [operating thetan] grade +c) to basically badger into a coma anyone who had ever spoken out against Command or the Church. Like me, 'cause I helped a friend escape from all that b.s. Said friend heard from Org again later, suggesting that his ethics might have been invalidated by his friendship with a certain SP (suppressive person) who, as luck would have it, had my name.

Like I'm concerned. Me? I am one of the SubGenius, who were cast up upon these shores millenia ago when the first One True Salesman did puff on his pipe of Frop and say "Gimme 20 dollars... or kill me." So I ain't got time for John Travolta copying RTTY in his head. After all, he's got a Thetan in there with him.

But I do think he otter get a ticket fer using phones on 30 metrons  
and trying to talk to Dianetics Ross. Or was that Dianetics-dot-Command?

I love fiction. There's so much of it around that it makes every  
day like something like else. YouknowwhatImean, Verne?

73

Nils

WB8IJN +c

a.k.a Rev. Billy Sol Rajguptastein

a.k.a Swami Rajnuk Chittawan O'Shanneseystein Ji

and channeller for Abu Wombat Hotsie-Totsie Mojo Rubdown,

hair dresser to his majesty Pharoah Amen Toe-tap Bojangles III,

master of all Vending Machines (1293-1341\*10E12 BC)

and follower of J. R. "Bob" Dobbs, among others....

but sometimes I do try to lead... by example...

or something... heh heh heh .... .heh heh heh.... heheh....

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996

From: brozenske@juno.com (Barrie L Brozenske)

Subject: [10172] Re: 73kHz Licence Applications

Message-ID: <19960622.101726.14958.4.Brozenske@juno.com>

Wow, Dave, that'll be a real party line on SSB! Still, it should be  
interesting on CW if it doesn't get T00 crowded. Do the authorities  
plan to approve all applications?

Thanks for passing on this tidbit.

73,

Barrie, K3BUZ

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\*\*\*\*\*

On Sat, 22 Jun 1996 08:51:34 +0100 Dave.Ackrill@WESTWOOD45.powergen.co.uk  
writes:

>

> Hi all,

>

> If anyone is interested in a listing of all of the applications

>for

> the new LF allocation in the UK, I can send them a copy. I wont

>take  
> up the space on the listing to everyone as it's 127 line long!  
>  
> For those who may not have heard, the new allocation is 71.6 to  
>74.4  
> kHz and is available to UK "A" license holders (there are 4  
>classes of  
> licence available in the UK - A = all HF/VHF/UHF bands,  
> B = Full VHF/UHF bands, Novice A = Some HF and VHF/UHF bands QRP  
>and  
> Novice B = some VHF/UHF bands QRP)  
>  
> Although the power limit of 1W ERP, and the fact that most  
>antennas  
> will have an efficiency of less than 1%, means that it will be  
> possible to run more than 5W RF CW or 10W SSB, I guess that many  
>will  
> be using low power home-brew gear. So it would seem as if this  
>might  
> be an ideal QRP experimenters band.  
>  
> I'd be interested to hear from anyone active on LF anywhere else,  
>I  
> understand that some other countries have allocations around  
>160kHz.  
> I've found the "Longwave" web page and that seems an interesting  
> source of news etc., but does anyone know of any other please?  
>  
> Cheers de Dave (G0DJA)  
>  
> RSGB Propagation Studies Committee Member and G-QRP Club Member  
> No. 3247  
>  
>

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: "L. B. Cebik" <cebik@utkux.utcc.utk.edu>  
Subject: [10167] Re: Loops  
Message-ID: <Pine.SOL.3.91.960622075221.29855A-100000@utkux4.utcc.utk.edu>

On 20 Jun 1996 Bob\_Tellefsen-CNSE97@email.mot.com wrote:

> LB  
> I've been reading your posts about modeling the delta loops.  
> I used to use them myself, but now run a pair of 40m diamond loops in phase.  
> I use a 50' tv pushup mast, and the sides of the diamond bulge out slightly,

> so the longer axis is horizontal.  
>  
> The bottom corner is only about 6 ft above ground, and I feed at the side for  
> vertical polarity.  
>  
> Sometime, if curiosity moves you, I'd be interested in what the models say  
> about the comparison between the diamond loop and a delta on a comparable  
> mast.  
>  
> I've had good luck with both, but thot I'd use the diamond to more closely  
> approximate a vertical dipole.  
>  
> 72/73 Bob N6WG  
>  
Bob,

Your use of a side-fed quad loop set up as a diamond is interesting and worth sharing.

Using your max height as 50' and min height as 6', models suggest a total side span of 57.3', compared to the height span of 44'. This is not much of a bulge.

In this same space, one can fit an equilateral delta loop, with the bottom at 8' and the top at between 49 and 50'. So this is the model I used for comparison. I took data on 2 versions with the bottom wire low, one fed at bottom center (BOT) and the other fed about 25% up the side for maximum vertical radiation (SID). I also inverted the delta and fed it at the lower apex (APX). These I compared with the model of your loop (DIA). I used the SID model, having the lowest angle of max radiation (T0) of the deltas. So for BOT and APX, you will see two sets of gain numbers, one for the natural T0 of the model, the other for 22 degrees, the T0 of SID.

I give in the table also the total wire length of the loop and the general formula for that length, just as a reference. It will vary with antenna height and wire size (as well as for insulated vs. uninsulated wire).

Model	Gain	T0	R +/- jX	L	Formula L
SID	1.03 dBi	22 deg	172 + 1.8	145.2'	1038/f
BOT	3.21	68	103 + 7.5	144'	1030/f
	-.76	22			
APX	5.64	43	134 + 1.4	145.2'	1038/f
	3.45	22			
DIA	1.30	21	132 - 2.9	144.5'	1033/f

Note that the side-fed delta and the side-fed diamond have very comparable figures, with the diamond having slightly more gain. The gain is a function of the higher feedpoint height. Both the DIA and the SID minimize horizontal

radiation (which is mostly at higher angles) so that it is at least 20 dB below max gain and thus contributes little to the overall field.

The patterns for BOT, SID, and DIA are broad ovals broadside to the face of the loop. The pattern of APX is more peanut-shaped in the same broadside plane. The APX, if mechanically feasible, is perhaps the best general purpose 40 meter antenna of the group, with good one hop and multi-hop gain. For DX, it has more gain on both transmission and reception, but it does receive well at higher angles, allowing more short distance noise and QRM into reception on a given frequency.

A delta with the horizontal wire at the near 50' level and fed at the bottom apex has more gain at the 22-degree angle than either SID or DIA. However, its max gain at 43 degrees would likely mean greater noise and QRM from nearer (domestic) stations, reversing the strength relationship between nearer and more distant skip stations. If we assume that minimum gain for reception is achieved by all the models, then the antennas with a lower natural gain at higher angles may permit better reception of weak dx. However, transmitted gain will also be lower at the 22-degree angle for the lower gain vertically polarized antennas.

On your question of approximating a vertical antenna (without need for a ground radial system), either SID or DIA fill that bill equally.

Consider the mechanics: One 50' suspension point, a 6' bottom point, and side points 57.3' apart and only 28' high. This may be feasible for some folks and give some improvement over the side-fed delta. It can also be bottom fed, have the peak opposing the feedpoint opened for possible 80-meter use, be fed at the bottom in parallel as a fat-wire vertical, etc. There may be possibilities here for other builders, which is why I am sharing these notes on qrp-l.

I did not model phased loops because well-phased vertical antennas add about 3 dB gain in the favored direction with a cardioid pattern, where front-to-back ratio is dependent on getting just the right degree of phasing for the exact distance apart--the results would simply have paralleled the differences between SID and DIA.

Hope these notes are useful to you.

-73-

LB, W4RNL

From owner-qrp-l@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: jfurman@stratacom.com (Jeff Furman)



Subject: [10163] Re: matching transformer  
Message-ID: <9606220637.AA15540@Strata.COM>

Peter, The impedance is transformed by the square of the turns ratio. Here's how to understand this: take a transformer with M primary turns and N secondary turns; the input voltage  $V_{in}$  applied to the primary is transformed to  $V_{in} \cdot N/M$  volts at the secondary side. In addition,  $I_{in}$  is the primary current due to the load, the load current is  $I_{in} \cdot M/N$  in the secondary. Now the impedance you see at the primary is  $V_{in}/I_{in}$  and the impedance you see at the secondary is  $(V_{in} \cdot N/M)/(I_{in} \cdot M/N)$  or  $(V_{in}/I_{in}) \cdot (N/M) \cdot (N/M)$  which is the impedance at the primary times the square of the turns ratio. All this is for an ideal transformer, however, it establishes the rule of thumb. These impedances are external to the transformer; a good transformer will not contribute much of its own internal impedance.

Transformers only come with turns ratios as integer ratios; especially toroid transformers

have few turns, so the ratios are constrained: 2:1, 3:1, 4:1, 5:1, 5:4, 4:3, 3:2, 5:3, 5:2 give impedance ratios 4:1, 9:1, 16:1, 25:1 1.5625:1, 1.778:1, 2.25:1, 2.778:1, and 6.25:1 as easy examples. There are ways of using multiple transformers to get still different ratios, I think the Radio Amateur's Handbook may have some examples in the antenna section. The real problem you have is the identification of the core material magnetic properties given the color of its coating. Only if you know the manufacturer and his proprietary color code (if any) can this make sense. Short of making measurements the way the manufacturer does,

try it and see what happens. The core may not be any good for 7Mhz, so be aware of that possibility. If the core gets hot, that's a bad sign of excessive losses. Stacking the cores to put more core material in the transformer may possibly help. I don't know if you want to risk the health of your final without using a dissipative antenna bridge; even then, the core may saturate with full power, taking away the coupling that seemed okay at low power. I would like to be more optimistic, but caveat experimenter.

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996  
From: wq8q@juno.com  
Subject: [10171] RE: MFJ No Ground/No Radial/No Signal Antenna  
Message-ID: <19960622.101854.6663.1.wq8q@juno.com>

IN reply to K3HRN's query on the MFJ Vertical antenna:

I've spent many foolish dollars on several vertical antennas (antennae?) mainly because the house I live in has the power lines running across the back yard (yeah, we bought it before I was a ham) so I've had to "make do" the best I could and verticals were (what I thought) the way to go.

The Cushcraft R4 was the best performing radial, mounted on the roof, until lightning took out the matching box . . . and I balked at paying \$125 for another box.

The Butternut Vertical Hf6V - ground mounted because their extra-cost CPK counterpoise kit doesn't work (got that from an engineer at Butternut, after I managed to actually track someone down at my own expense on the phone) so the counterpoise kit is assembled, hanging in the garage. The HF6V is lying in the back yard. Have to mow around it. Too lazy to take it apart.

The MFJ - oh, yes, the wonderful MFJ do-everything, no radial vertical antenna . . . roof mounted (chimney, actually) performed just as I expect every MFJ product to perform . . . which is BARELY! Poor design, lousy construction, cheapest materials possible. . . trying to do too much for everyone . . . EXTRA noisy reception, high noise level, lousy signal reports on transmission . . . and I can't blame it on conditions . . . the MFJ went up soon after the R4 came down . . . and that was in good sunspot days. They haven't improved any . . . I 've helped a number of other hams put them up and take them down. AND WHAT A BEAR TO ASSEMBLE!

So, what am I using now? A sort-of-half-size G5RV that I've used for years when the verticals fail . . . gets the job done, even if I have to use a transmatch.

Would I buy another vertical? I'm eyeing the Cushcraft R7000 . . . a lot of bucks, but seems to be built better than the R4 . . . and I can use it on 40. Haven't seen the Hy-Gain DX-77 . . . so I have no opinion . . . don't know anyone who has one, either.

The Gap? Well, never tried one of those but have a couple friends that have them. So I only know what I've seen and been told . . . and I think I'll pass.

As in all things electronic, my advice is to stay away from anything MFJ unless they're the only ones who make what you need . . . then good luck.

73 de Rick, WQ8Q

From owner-qrp-1@Lehigh.EDU Sat Jun 22 23:04:28 1996

From: JessQRP@aol.com

Subject: [10174] Re: MFJ No Ground/No Radial/No Signal Antenna and other verticals.

Message-ID: <960622140006\_140595113@emout15.mail.aol.com>

What a mouthful~:-)

I am sorry that you have had such bad experience with verticals. I feel inclined to add my own two cents worth.

I started out with a G5RV and a set of used Kenwood 599's. Great radios, wish I still had them. I made enough contacts on that setup after passing my novice to upgrade to general at 13 wpm in two months with all of my practice on the air qso's. The G5RV was mounted laying down lazy inverted V fashion with the high point at 20 feet and the twinlead on the roof. Should not have worked at all but it did.

The next antenna setup was a fan dipole at the back of the yard set up on a telescopic mast with the apex at 35 feet. It had wires cut for 10-20-40-80. It played and tuned on 17-30 and 160 as well. It was fed with coax and had a good 1 to 1 balun at the feed point. I worked my first 100 countries at 100 watts with this setup.

It was at this point that I got curious about 30 meters and built my first QRP rig as the Kenwoods did not have warc bands. I put up a small 30 meter dipole on the roof of the house at 20 feet and worked the world on 5 watts and a simple dipole. I was forever hooked on QRP at this point.

The next antenna that went up was the Cushcraft R 7. I would not have done this believing as my other ham friends did, that verticals radiate poorly in all directions, just at a lower angle. I could not have been further wrong. In all comparisons on all bands from 40-10, the R 7 was equal or in most cases louder than the dipoles at the receiver. The R 7 was NOISY in most cases, but was better heard. As far as DX was concerned, there was no comparison. My response to calling DX stations on Cw and SSB improved at least 20 %. The only time that the dipoles seemed better was at real close single hop distances of 300-500 miles and less. According to everything that I have read on antennas, and that is a BUNCH, this holds up under theory as well. The WORST antenna that I ever put up was a full one wave 80 meter loop that was up only 20 feet. I was barely heard at a test station 40 miles away at 559. I took the loop down and put up a inverted L cut for 80 meters. It was 16 feet to the top of the L and only had two 1/4 wave radials. The signal at the receiving test station went from 559 to 40 over 9. When I wanted to talk on 80 meters after putting up the L, I was HEARD!.

The very next antenna that I put up for general use was a two element phased array on 30 meters commonly referred to as the half square. In my humble opinion, for the simplicity and cost versus gain and performance, there is no better antenna period than the half square. It beat all of the reference antennas that I had up at that time including the R 7, the 80 meter L and the 30 meter dipole by 2-3 s units transmit and receive.

So, what is the point of all this rambling? Simple, verticals work!

I now have all of my antennas down and the only one that I have up now is the Gap Titan.

It is a GOOD antenna. I had it up along side the R 7 before I sold it for about 1 week and after getting the Gap tuned, it beat the R 7 by a little on

some cases and a lot in others. The R 7 does not play on 80 meters. The Gap does. The 30 meter performance of the R 7 was OK, the performance of the Gap On 30 meters is a very good performer. On 40 meters Cw, my favorite mode and band, the Gap is as good as the R7. The BIGGEST difference with the Gap is it is QUIETER. About 2-3 s units quieter. The signals are not as loud on the Gap as the R 7, BUT, the signal to noise ratio on the Gap is LOTS better.

So, there you have it, one mans subjective opinion. I have tried a faor amount of antennas in my short 5 years as a ham, but VERTICALS WORK.

For the realestate and the bands covered, there is no better compromise antenna than a vertical. The only other recommendation would be to build a small receive loop for the lower bands (40 and 80) to help kill some of the noise inherent with verticals. Or leave up your small dipoles and receive on them. There is no do all and be all antenna. Or to put it another way, there is no free lunch.

As far as the 6BTV goes, I have a freind with one mounted about 20 feet off of the ground and 4 elevated radials for each of the bands, and he kicks my butt everytime!

And you are right, the MFJ vertical is a piece of crap.

Best

Jess NOTFI

P.S. Easter Island on 700 mills 559 and 40 meters to Antarctica 1 watt 559 speaks for the performance of verticals!